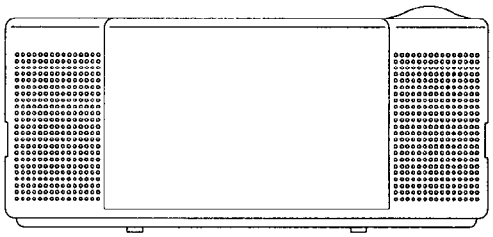
aiwa
SERVICE

FR-A505 EZS



SERVICE MANUAL

CLOCK RADIO

aiwa

S/M Code No. 09-001-340-5S1

SUPPLEMENT
DATA

ALTERATION LIST
MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RU7-010-900		CAB,FRONT<EZS>
2	S8-RU7-060-400		BTN,SNOOZE<EZS>
3	S8-RU7-040-320		WINDOW DIAL<EZS>
5	S8-RU7-070-020		BTN,CLOCK<EZS>
6	S8-RU7-080-010		KNOB,SLIDE ALARM<EZS>
8	S8-RU7-090-020		KNOB,SLIDE POWER<EZS>
9	S8-RU7-210-020		KNOB,SLIDE BAND<EZS>
10	S8-RU7-050-020		KNOB,VOLUME<EZS>
16	S8-RU7-110-020		KNOB,TUNING KNOB<EZS>
21	S8-RU7-020-400		CAB,REAR<EZS>
24	S8-RU7-100-020		KNOB,SLIDE DIMMER<EZS>
25	S8-RU7-030-020		DOOR,BATT<EZS>

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111

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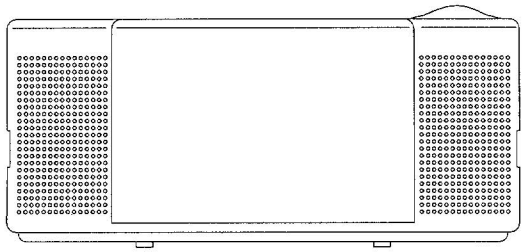
FR-A505



CLOCK RADIO

• TYPE: LH,HRJ,EZ

SERVICE MANUAL

S/M Code No. 09-983-259-7R2

SPECIFICATIONS

LH, HRJ MODELS

Power source	AC 110 – 120 V/220 – 240 V, 50/60 Hz, selectable
Output	280 mW (EIAJ)
Power consumption	5 W
Speaker	50 mm, 16 Ω (2)
Frequency range	FM: 87.5 – 108 MHz AM: 530 – 1,650 kHz
Antennas	FM wire antenna Ferrite bar antenna for AM
Dimensions (W × H × D)	240 × 108 × 90 mm (9 1/2 × 4 3/8 × 3 5/8 in.)
Weight	824 g (1.8 lbs.)

- Design and specifications are subject to change without notice.

EZ MODEL

Power source	AC 230 V, 50 Hz
Output	280 mW (EIAJ)
Power consumption	5 W
Speaker	50 mm, 16 Ω (2)
Frequency range	FM: 87.5 – 108 MHz AM: 530 – 1,605 kHz
Antennas	FM wire antenna Ferrite bar antenna for AM
Dimensions (W × H × D)	240 × 108 × 90 mm (9 1/2 × 4 3/8 × 3 5/8 in.)
Weight	814 g (1.78 lbs.)

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

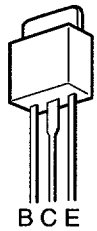
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	S2-085-620-000		IC,LM-8562
	S3-108-301-010		IC,TDA-1083/2B/3C/3A
TRANSISTOR			
	89-110-155-010		TR,2SA1015-GR
	89-211-821-080		TR,2SB1182(Q)/TLR
	89-318-154-080		TR,2SC1815GR
	86-NFZ-657-080		TR,2SC1923(O)
DIODE			
	82-596-799-010		DI,1N4001B
	82-135-799-010		DIODE,IN4148
	87-017-080-080		ZENER,3.9V 1/2W
	S9-7U0-6R2-1B0		ZENER,6.2V
MAIN C.B			
C116	87-010-380-010		CAP,E 47-16V
C119	87-010-908-080		CAP,E 220-10V
C125	87-010-380-010		CAP,E 47-16V
C127	87-010-249-010		CAP,E 470-16V
C129	87-010-908-080		CAP,E 220-10V
C134	87-010-380-010		CAP,E 47-16V
C202	87-010-249-010		CAP,E 470-16V
C203	87-010-037-010		CAP,E 10-50V
C213	87-010-053-810		CAP,E 1-50V
C214	87-010-249-010		CAP,E 470-16V
C215	87-010-380-010		CAP,E 47-16V
C301	87-010-263-080		ELECT CAP 100-10V
C401	87-010-035-010		CAP,E 2.2-50V
J101	S0-800-960-0A0		JACK,HP 3.5MM MON
L105	S1-122-531-000		COIL,MW 0.07/3-100-4
L107	87-005-683-080		INDUCTOR 15UH
L108	S0-118-160-000		COIL,INDUCTANCE CB-250-5-0.35
L201	S0-300-140-000		COIL,CHOKE 100UH
L202	87-005-686-010		COIL,15UH
LED201	S0-140-550-000		LED DISPLAY
PVC101	S3-222-000-000		PVC,AM/FM
S101	S2-200-611-030		SW,SLIDE SK22D02G(A)<EZ,HR>
S101	S2-200-511-060		SW,SLIDE 2P2T<LH>
S207	S4-300-611-030		SW,SLIDE 4P3T SK43D06
S208	S2-400-211-000		SW,SLIDE 2P4T
S209	S1-200-411-030		SW,SLIDE SK12D07VG4-L-NSA<HR,LH>
S401	S2-300-511-020		SW,SLIDE 2P3T SK23D06
T101	S1-001-300-100		IFT,F-810013 10MM
T102	S1-001-400-100		IFT,F-810014 10MM
T103	S1-001-700-100		IFT,A-810017 10MM
T104	S0-446-800-100		IFT,A4468 10MM
T105	S1-001-500-100		IFT,F-810015 10MM
T106	S0-968-300-100		IFT,OA-709683 10MM
VR101	SE-095-031-040		RES,VARIABLE 15A50K
LED C.B			
D407	S0-003-800-060		LED,GL380 3MM
Q406	87-A30-031-010		TR,PT380F
SW1 C.B			
SW2 C.B			
S204	SK-HH9-130-000		SW,PB(CSDSR510,515)

- コネクタについては、初回発注の扱いとはせず、受注後に業者へ発注し、供給致します。
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

TRANSISTOR ILLUSTRATION

2SA1015
2SC1815
2SC1923



2SB1182

VOLTAGE CHART

TUNER SECTION (FM/AM)

TEST CONDITION: SET FM/AM ON ONE FREQUENCY

IC101(TDA1083)

PIN'S NUMBER	1	2	3	4	5	6	7	8
FM	1.64	1.62	0	5.26	5.26	0	0	1.84
AM	1.25	1.22	0	5.28	5.28	1.14	1.24	1.52
PIN'S NUMBER	9	10	11	12	13	14	15	16
FM	0	1.23	0	2.34	5.27	5.27	5.27	2.14
AM	0	1.24	0	2.35	5.28	5.28	5.28	1.55

	Q101(1923)			Q102(1923)		
	E	C	B	E	C	B
FM	0.78	4.04	1.52	0.62	4.52	1.21

CLOCK SECTION

IC201(LM8562)

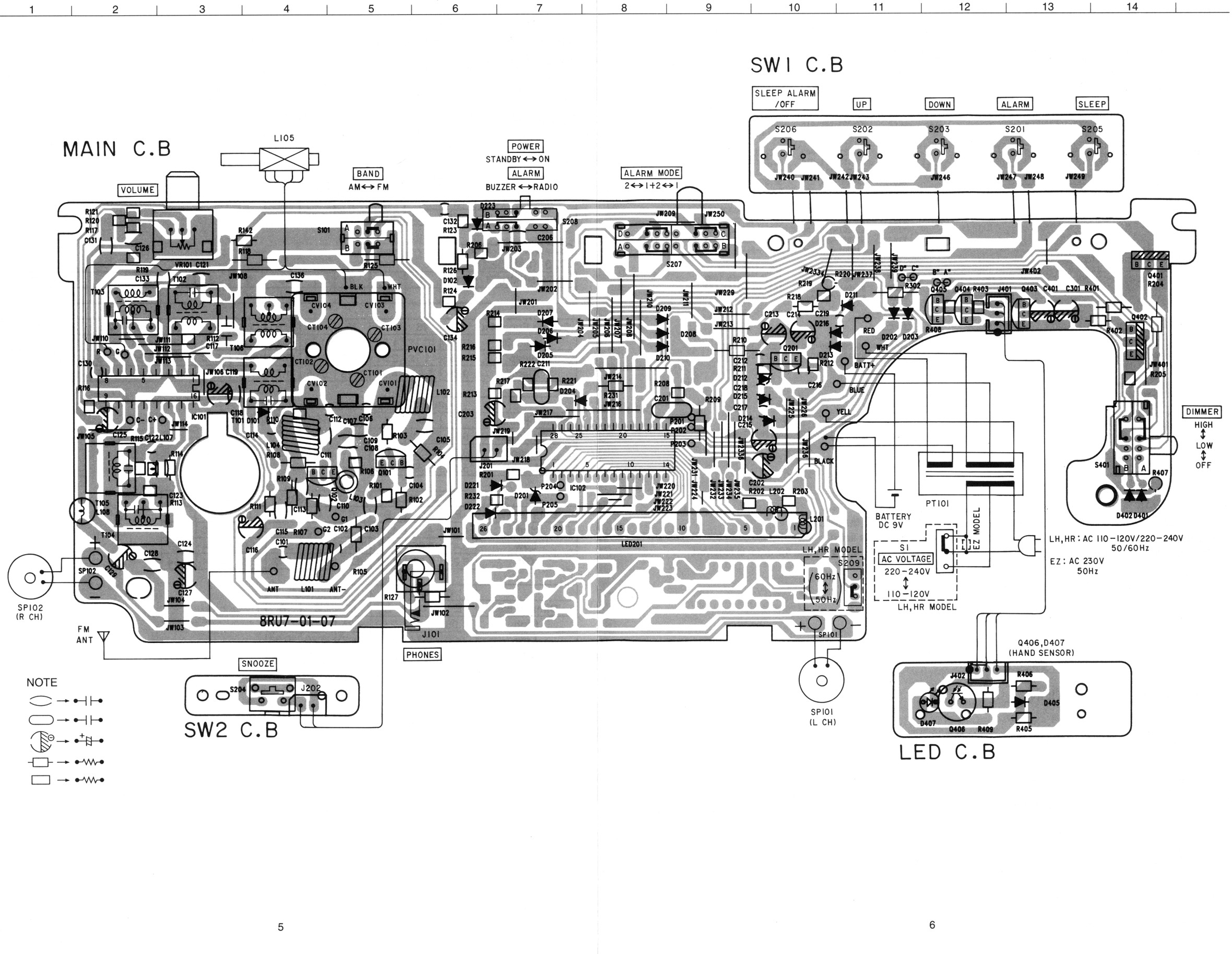
PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Switch Function	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Radio On	10.03	10.12	1.53	9.55	-1.76	-1.76	3.79	1.90	4.39	4.38	3.31	-1.78	4.35	-1.79
Sleep	11.56	11.12	2.51	-0.75	-0.64	-0.77	4.89	4.10	5.52	5.56	4.45	-0.68	5.39	-0.70
Alarm	9.89	7.82	4.14	8.85	5.35	-1.73	-1.74	2.12	4.27	4.28	3.36	-1.81	4.31	-1.73

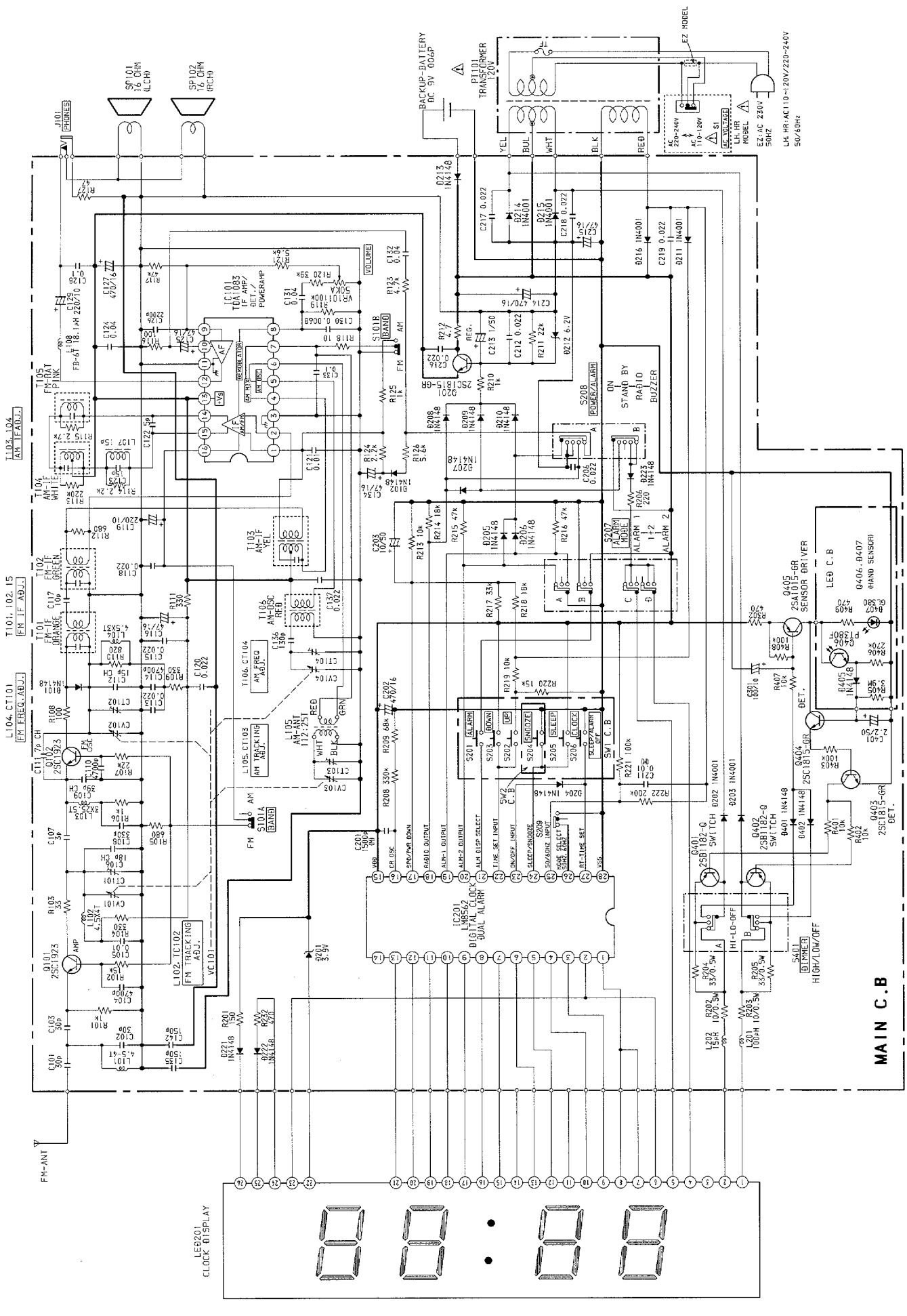
	Q201(1815)		
Switch Function	E	C	B
Radio On	5.27	6.41	6.03
Sleep	0.51	11.12	0
Alarm	5.15	9.82	5.76

	Q401(1182)			Q402(1182)			Q403(1815)		
Dimmer sw.	E	C	B	E	C	B	E	C	B
High	4.43	4.10	4.40	4.70	4.33	4.70	-1.90	5.46	-1.87
Low	5.41	5.05	5.41	5.48	5.08	5.52	-1.27	6.74	-1.27
Off	8.25	7.97	4.34	8.25	7.95	4.42	2.84	2.94	3.54

	Q404(1815)			Q405(1015)		
Dimmer sw.	E	C	B	E	C	B
High	-1.98	-1.50	-2.09	9.25	-1.54	9.25
Low	-1.25	-0.77	-1.26	10.40	-0.99	10.36
Off	6.48	10.59	7.18	10.69	10.65	9.85

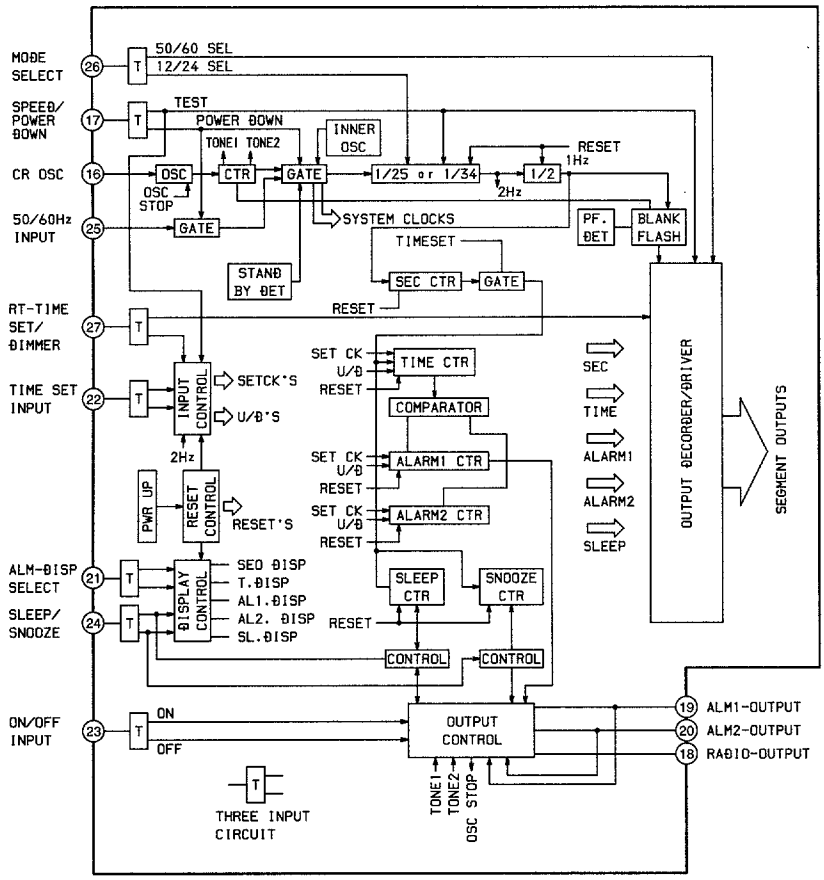

MAIN C.B
SWI C.B
SLEEP ALARM /OFF
UP
DOWN
ALARM
SLEEP
S206
S202
S203
S201
S205
VOLUME
BAND
AM↔FM
POWER
STANDBY↔ON
ALARM
BUZZER↔RADIO
ALARM MODE
2↔1+2↔1
L105
PVC101
8RU7-01-07
SNOOZE
PHONES
SP102
(R CH)
FM
ANT
SP101
(L CH)
LED201
IC102
P201
P202
P203
P204
P205
J201
J101
J202
S204
S207
S208
S209
S401
LH, HR MODEL
BATTERY
DC 9V
PT101
SI
AC VOLTAGE
220-240V
110-120V
EZ MODEL
LH, HR : AC 110-120V/220-240V
50/60Hz
EZ : AC 230V
50Hz
DIMMER
HIGH
LOW
OFF
Q406, D407
(HAND SENSOR)
LED C.B
SW2 C.B
NOTE

SCHEMATIC DIAGRAM

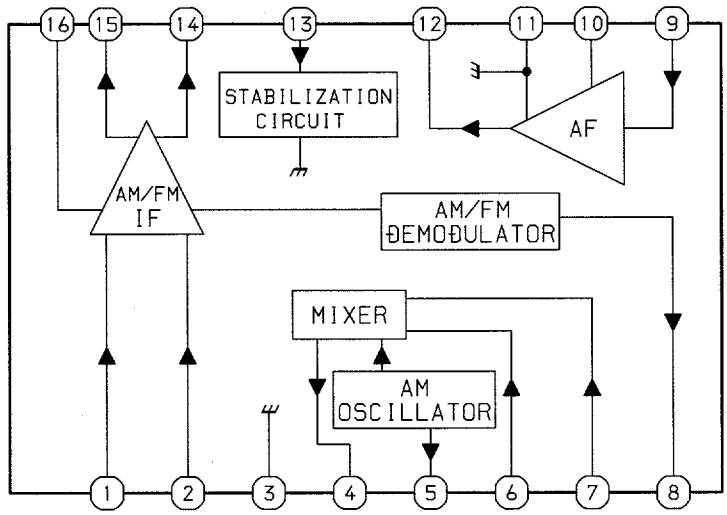


IC BLOCK DIAGRAM

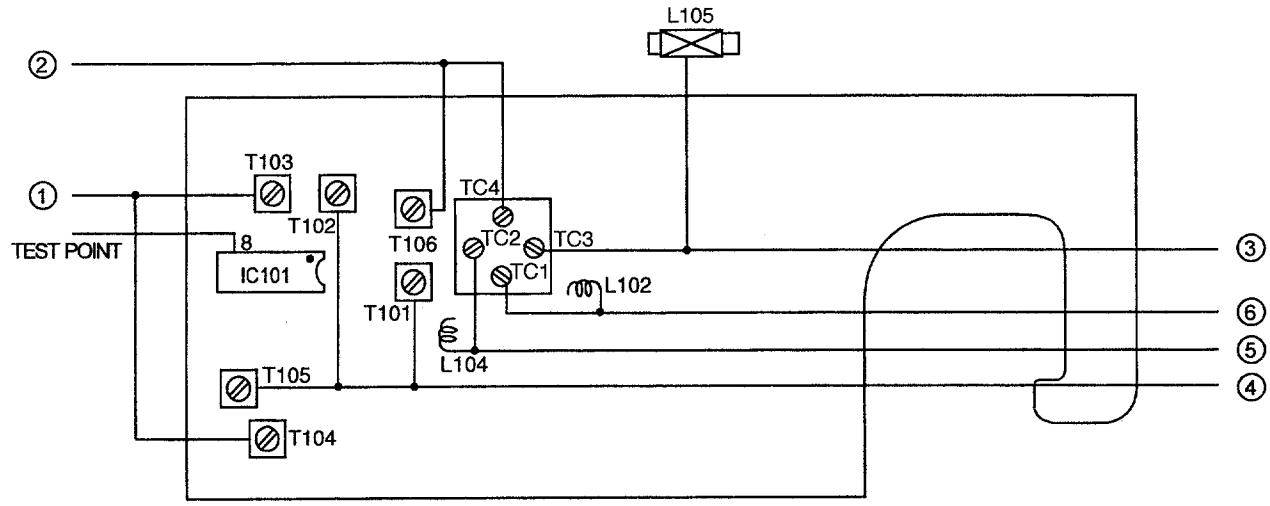
IC, LM8562



IC, TDA1083



ELECTRICAL ADJUSTMENT



TUNER SECTION ALIGNMENT DIAGRAM

1. AM IF Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: T103, T104
   T103, T104 ---------- 455 kHz

2. AM Frequency Range Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: T106, VC1D
   T106 -------- 515 kHz waveform max.
   TC4 ---------1650 kHz waveform max.

3. AM Tracking Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: MW COIL, VC1C
   L105 ---------- 600 KHz waveform max.
   TC3 ---------- 1400 KHz waveform max.

4. FM IF Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: T101, T102, T105
   T101, T102, T105 ---------- 10.7 MHz

5. FM Frequency Range Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: L104, VC1B
   L104 ---------- 87.2 MHz (EZ VERSION)
   87 MHz (HR, LH VERSION)
   TC2 ---------- 108.3 MHz (EZ VERSION)
   109.2 MHz (HR, LH VERSION)

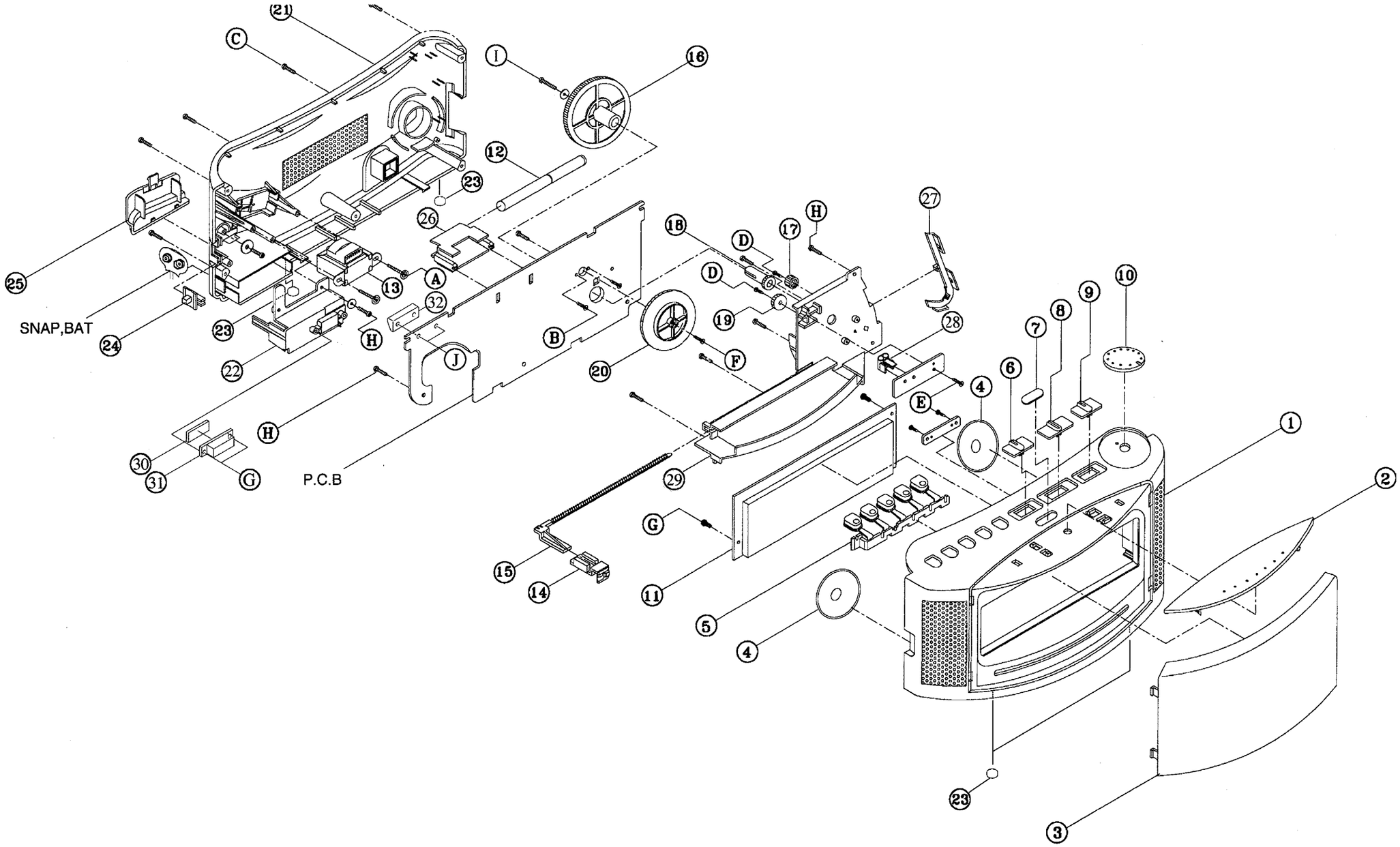
6. FM Tracking Adjustment
   Test point: IC101(TDA1083) 8 PIN
   Adjustment location: L102, CV1A
   L102 ---------- 88 MHz waveform max.
   TC1 --------- 108 MHz waveform max.

MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RU7-010-600		CAB,FRONT<LH>
1	S8-RU7-010-300		CAB,FRONT<EZ>
1	S8-RU7-010-500		CAB,FRONT<HR>
2	S8-RU7-060-100		BTN,SNOOZE
3	S8-RU7-040-300		WINDOW,DIAL<EZ>
3	S8-RU7-040-400		WINDOW,DIAL(LH/HR)<HR,LH>
4	S2-099-003-000		SPKR,2 16 OHM 0.3W-0.5W
5	S8-RU7-070-010		BTN,CLOCK
6	S8-RU7-080-000		KNOB,ALARM
7	S8-RU7-230-000		SENSOR WINDOW
8	S8-RU7-090-000		KNOB,POWER
9	S8-RU7-210-000		KNOB,SLIDE BAND
10	S8-RU7-050-010		KNOB,VOLUME
11	S0-140-550-000		LED DISPLAY
12	S0-100-700-000		FERRI,BAR 10-70MM
⚠ 13	S1-58R-U71-300		POWER,TF EI-35/15 115/230V<LH>
⚠ 13	S1-87R-U21-400		PT,EI-35/15 230V:9Vx2/10.5V<EZ>
⚠ 13	S1-57R-U21-300		PT,TF EI-35/15 115/230V<HR>
14	S8-RU7-120-000		POINTER,DIAL
15	S8-RU7-140-000		GEAR,POINTER
16	S8-RU7-110-000		KNOB,TUNING
17	S8-RU7-190-000		GEAR,JOINT TUNING
18	S8-RU7-180-000		GEAR,TUNING
19	S8-RU7-200-000		GEAR,POINTER TUNING
20	S8-RU7-170-000		GEAR,POLYVARI
21	S8-RU7-020-100		CAB,REAR
22	S8-RU7-250-000		COVER,BAT<EZ>
22	S8-RU7-150-000		COVER,BATT<HR,LH>
23	S0-108-290-000		FOOT,RUBBER
24	S8-RU7-100-000		KNOB,DEMER
25	S8-RU7-030-000		DOOR,BAT
26	S8-RU7-160-000		HOLDER,ANTENNA
27	S8-RU7-240-000		BRACKET,POINTER
28	S8-RU7-220-000		HOLDER,SENSOR
29	S8-RU7-130-000		HOLDER,POINTER
⚠ 30	S1-200-000-030		SW,SLIDE SS12J01M-A-65<HR,LH>
31	S2-838-080-000		VOLT,SW COVER<HR,LH>
32	S8-RU7-260-000		PCB HOLDER
A	87-651-101-410		SCREW,ST3.0-18
B	87-322-071-010		SCREW,2.6-4MM KM
C	87-741-096-410		SCREW,ST3.0-10
D	87-741-035-410		SCREW,ST2.0-6
E	87-841-035-410		SCREW,ST2.0-6
F	87-261-072-010		SCREW,PM 2.6-5
G	87-741-094-410		SCREW,3-6
H	87-751-095-410		SCREW,ST3-8
I	87-B10-191-010		SCREW,3-22
J	87-352-075-010		VT2+2.6-10

MECHANICAL EXPLODED VIEW 1/1



ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO		PART NO.	KANRI NO.	DESCRIPTION
	1	S8-RU7-910-300		INSTRUCTION BOOK<LH>
	1	S8-RU7-910-400		INSTRUCTION BOOK(EX-ESC)<HR>
	1	S8-RU7-910-600		INSTRUCTION BOOK(EX-PHNCZ)<EZ>
	1	S8-RU7-910-500		INSTRUCTION BOOK(EZ)<EZ>
⚠	2	S2-201-200-000		CORD,POWER 6.5 VDE<HR,LH>
⚠	2	S2-201-200-010		POWER CORD<EZ>
⚠	3	S0-220-117-000		CONVERTOR 220V-117V<HR,LH>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

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